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| 10/699,159 | 10/31/2003 | Daniel C. Conrad | US20010201 | 1600 |

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| EXAMINER | |
|---|---|
| KHAN, AMINA S | |
| ART UNIT | PAPER NUMBER |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/699,159 | CONRAD ET AL. | |
| | Examiner | Art Unit | |
| | Amina Khan | 1751 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *22 December 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-13 and 79-95* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13 and 79-95* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/22/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

1. This office action is in response to applicant's amendments filed on December 22, 2006.

2. Claims 1-13 and 79-95 are pending. Claims 14-78 have been cancelled. Claims 1 and 10 have been amended. Claims 84-95 are new.

3. Claims 8,9,82 and 83 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Estes et al. (US 2002/0056164) in view of Radomyselski et al. (US 2003/0226214) for the reasons set forth in the previous office action.

4. Claims 12 and 13 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Estes et al. (US 2002/0056164) in view of Radomyselski et al. (US 2003/0226214) and further in view of Berndt et al. (US 6,059,845) for the reasons set forth in the previous office action.

5. All previous rejections not cited in paragraphs 3-6 are withdrawn.

### *Claim Rejections - 35 USC § 103*

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to

be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1,3,4,6,8-10,12,13,79,82,85,87,88 and 93-95 are rejected under 35 U.S.C. 103(a) as being unpatentable over Estes et al. (US 2002/0056164) in view of Berndt et al. (US 6,086,635).

Estes et al. teach methods of cleaning comprising delivering a substantially non-reactive, non-aqueous, non-oleophilic, apolar working fluid and at least one washing additive to fabrics in a wash container, applying mechanical energy to clothing and wash liquor, substantially removing the wash liquor from the fabric load (abstract), capturing and condensing the working fluid and filtering it (page 5, paragraph 0066), as claimed in claims 1 and 8. Estes further teaches that the working fluid has the following properties: surface tension of less than or equal to 35 dynes/cm$^2$; a KB value of less than or equal to 30; and a solubility in water of less than about 10% (page 2, paragraph 0020), as claimed in claims 1 and 9. Estes further teaches that the cleaning compositions comprise washing adjuvants such as surfactants, enzymes, bleaches, deodorizers, fragrances, antistatic agents, and anti-stain agents (page 2, paragraph 0024), as claimed in claim 6. Estes et al. further teaches that the filtered fluid can be reused on fabrics (See Figure 8, #117, #118 and #108).

Estes et al. are silent as to the type of filter used in the filtration process and does not specifically teach cross membrane filters or spin disc filters.

Berndt et al. teach methods of dry cleaning comprising placing articles in a rotating cleaning basket, adding Class 3-A type solvents, specifically siloxane,

agitating articles in solvent, extracting the solvent, recovering condensed vapors and filtering the solvent using a diatomaceous earth type in combination with a spin disc (column 3, line 30 to column 4, lines 15-47). Berndt et al. further teach polymeric filters which separate the water and lipophilic fluid into two streams (see Figure 4; column 5, lines 15-65). Berndt et al. further teach contacting the filters with condensed vapors prior to separation (column 4, lines 15-28 and lines 40-47).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the methods taught by Estes et al. by incorporating the cross flow and spin disc filters taught by Berndt because Berndt teaches the water and particulate removal benefits and working fluid purification benefits imparted by these filters to non-aqueous dry cleaning fluids in dry-cleaning applications. One of ordinary skill in the art would have been motivated to combine the teachings of the two references absent unexpected results.

8. Claims 2,5,7,11,80,81 and 83 are rejected under 35 U.S.C. 103(a) as being unpatentable over Estes et al. (US 2002/0056164) in view of Berndt et al. (US 6,086,635), as applied to the claims above, and further in view of Radomyselski et al. (US 2003/0226214).

Estes and Berndt are relied upon as set forth above.

Estes and Berndt do not teach absorbent bed filters, HLB values and impurity levels.

Radomyselski et al. teaches dry cleaning methods comprising dual filters such as absorbent and membrane filters (page 5, paragraphs 0065-0068), wherein the removal of contaminants can be 100% wherein 50-100% is sufficient (page 4, paragraph 0060). Radomyselski et al. further teaches the use of Neodol® surfactants, which have HLB's in the range of 8-15, as conventional components in dry cleaning operations (page 10, paragraph 0140).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the methods taught by Estes and Berndt by incorporating the absorbent bed filters, contaminant removal values and surfactants taught by Radomyselski because Radomyselski teaches contaminant removal benefits imparted by repeated exposure of the working fluid to these filters in dry-cleaning applications and the facilitated removal of contaminants. Radomyselski further teach the conventional use of surfactants of the claimed HLB values in dry cleaning compositions. One of ordinary skill in the art would have been motivated to combine the teachings of the two references absent unxpected results.

9. Claims 84-86,89 and 92 are rejected under 35 U.S.C. 103(a) as being unpatentable over Estes et al. (US 2002/0056164), Berndt et al. (US 6,086,635) and Radomyselski et al. (US 2003/0226214), as applied to the claims above, and further in view of Radomyselski et al. (US 2005/0000897).

Estes, Berndt and Radomyselski '214 are relied upon as set forth above.

Estes Berndt and Radomyselski '214 do not teach ceramic filters or cooling to below 0°C.

Radomyselski '897 teaches dry cleaning methods comprising removing contaminants such as water (page 3, paragraph 0049) with polymeric and ceramic membrane filters (page 4, paragraphs 0063-0067), wherein the pore size of the membrane is less than about 500 angstroms (page 5, paragraph 0077). Radomyselski et al. further teaches temperature modification to crystallize or freeze out one of the contaminants (page 9, paragraph 0146).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the methods taught by Estes Berndt and Radomyselski '214 by incorporating ceramic or polymeric filters taught by Radomyselski '897 because Radomyselski '897 teaches enhanced contaminant removal benefits imparted by temperature lowering and improved filtration provided by ceramic and polymeric filters. One of ordinary skill in the art would have been motivated to combine the teachings of the two references absent unexpected results.

Regarding the claimed pore size of the instant claims, a *prima facie* case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties, see *Titanium MetalsCorp. of America v. Banner,* 778F.2d 775, 227 USPQ 773 (Fed. Cir. 1985). See MPEP 2144.05I.

Regarding the temperature limitation of less than 0°C, the limitation would obviously be encompassed by the teachings of Radomyselski '897 because the

reference teaches crystallizing or freezing contaminants of which water is mentioned as a contaminant.

10. Claim 90 is are rejected under 35 U.S.C. 103(a) as being unpatentable over Estes et al. (US 2002/0056164) in view of Berndt et al. (US 6,086,635), as applied to the claims above, and further in view of Hallman (US 2003/0196277).

Estes and Berndt are relied upon as set forth above.

Estes and Berndt do not teach dead end filtration.

Hallman teaches filtration comprising a mechanical, particulate filters and a water absorbent media (page 3, paragraph 0033).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the methods taught by Estes and Berndt by incorporating the water absorbent media taught by Hallman because Hallman teaches efficient contaminant removal benefits imparted by exposure of the working fluid to these filters in dry-cleaning applications and efficient regeneration of dry cleaning fluids. One of ordinary skill in the art would have been motivated to combine the teachings of the two references absent unexpected results.

11. Claim 91 is are rejected under 35 U.S.C. 103(a) as being unpatentable over Estes et al. (US 2002/0056164), Berndt et al. (US 6,086,635) and Radomyselski et al. (US 2003/0226214) as applied to the claims above, and further in view of Hallman (US 2003/0196277).

Estes, Berndt and Radomyselski are relied upon as set forth above.

Estes Berndt and Radomyselski do not teach dead end filtration..

Hallman teaches filtration comprising a mechanical, particulate filters and a water absorbent media (page 3, paragraph 0033).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the methods taught by Estes, Berndt and Radomyselski by incorporating the water absorbent media taught by Hallman because Hallman teaches efficient contaminant removal benefits imparted by exposure of the working fluid to these filters in dry-cleaning applications and efficient regeneration of dry cleaning fluids. One of ordinary skill in the art would have been motivated to combine the teachings of the two references absent unxpected results.

***Response to Arguments***

12. Applicant's arguments filed regarding the rejection of claims 8,9,82 and 83 under 35 U.S.C. 103(a) as being unpatentable over Estes et al. (US 2002/0056164) in view of Radomyselski et al. (US 2003/0226214) have been fully considered but they are not persuasive. The applicant argues no cooling of the working fluid is cited in these references.

The examiner respectfully disagrees, Estes clearly teaches capturing and condensing the working fluid and filtering it to separate the fluid from performance enhancers (page 5, paragraph 0066). The rejection over the claims is maintained.

13. Applicant's arguments filed regarding the rejection of claims 12 under 35 U.S.C. 103(a) as being unpatentable over Estes et al. (US 2002/0056164) in view of Radomyselski et al. (US 2003/0226214) and further in view of Berndt et al. (US 6,059,845) have been fully considered but they are not persuasive. The applicant argues Berndt does not teach removing working fluid nor water vapor from the air stream.

The examiner respectfully disagrees, Berndt clearly teaches recovering condensed vapors and filtering the solvent using a diatomaceous earth type in combination with a spin disc (column 3, line 30 to column 4, lines 15-47). Berndt et al. further teach contacting the filters with condensed vapors prior to separation (column 4, lines 15-28 and lines 40-47) which would obviously remove water and working fluid vapor from the air stream.

The rejection over the claims is maintained.

***Conclusion***

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory

period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amina Khan whose telephone number is (571) 272-5573. The examiner can normally be reached on Monday through Friday, 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas McGinty can be reached on (571) 272-1029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AK
April 30, 2007

LORNA M. DOUYON
PRIMARY EXAMINER